Nomenclatural Status and Some Additions to the Species Listed in the Publication, *New Species of Mosquitoes in the Fauna of the USSR* by A. V. Gutsevich and A. M. Dubitskiy (1981) (Diptera: Culicidae)

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ABSTRACT. The taxonomic position of a number of species of Culicidae from the USSR is discussed. The following four species have been recorded from the USSR since 1981: *Aedes (Edwardsaedes) bekkui*, *Ae. (Finlaya) versicolor*, *Ae. (Ochlerotatus) cypriodes* and *Culiseta (Culiseta) nipponica*.

INTRODUCTION

Since the publication of "New species of mosquitoes in the fauna of the USSR" by Gutsevich and Dubitskiy (1981), there have been changes in the status of certain species included in their "List of mosquito species of USSR fauna" (l.c., pp. 98-101). In addition, some earlier changes in their taxonomy of several species were not shown by them. This may be related to the lack of pertinent literature at the time the manuscript was submitted, or due to differences in the interpretation of certain species groups or complexes, viz., the *Anopheles maculipennis* complex.

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COMMENTS ON RECORDED SPECIES

Genus *Anopheles*

The taxonomy and nomenclature of the *Anopheles maculipennis* complex was summarized by White (1978) who utilized morphological characters (including egg features), genetic crossing experiments and polytene chromosome patterns to redefine the various allopatric and sympatric species. This modern treatment which follows Mayr's (1963, 1969) definitions of species and subspecies has been accepted by most mosquito systematists, but was not mentioned by Gutsevich and Dubitskiy (1981). With respect to the *maculipennis* complex, they state (l.c., p.102): ..."we consider them as subspecies, as before, because we do not see any basis for changing our viewpoint which earlier was substantiated in brief (Fauna ..., pp. 90-93) (Gutsevich et al. (1971). An exception may be made for *An. sacharovi*, which differs, although slightly from other members of the *"Anopheles maculipennis* complex" in imagoes, larvae and egg structure. The authors place the greatest reliance upon morphological structures for the separation of species and minimize the value of crossing experiments. *Anopheles maculipennis* Meigen is considered by these authors as a single polytypic species with six Palearctic subspecies.

On the basis of White (1978) and earlier studies, the *An. maculipennis* subspecies *maculipennis, messeae* Falleroni, *beklemishevi* Stegnii and Kabanova and *atroparvus* Van Thiel from the USSR should be considered separate species.

Anopheles maculipennis subalpinus Hackett and Lewis (of Gutsevich and Dubitskiy 1981:99) was considered as a subspecies of *melanoon* Hackett by Knight and Stone (1977). Later, White (1978) presented evidence that *subalpinus* represents an alternate egg phenotype of *melanoon* with two kinds of eggs intergrading in some localities. Consequently, *maculipennis subalpinus* should be replaced by the name *melanoon* in the USSR list.

Genus *Aedes*
Subgenus *Aedes*

In 1972, Peus reduced *Ae. rossicus* Dolbeskin, Gorickaja and Mitrofanova to a subspecies of *Ae. esoensis* Yamada. This change was not noted by Gutsevich and Dubitskiy (1981) who considered both of these as subspecies of *Ae. cinereus* Meigen. Tanaka et al. (1975) agreed with the earlier arrangement of Peus (1972) in which *cinereus* and *esoensis* were considered as distinct species, with *Ae. rossicus* as a subspecies of *Ae. esoensis*. They had difficulty with the subspecies concept as used by Gutsevich et al. (1971) as the distribution ranges of the *"cinereus"* subspecies *cinereus, eroensis* and *rossicus* overlap with each other in vast areas of the USSR.

Forty-four species of the subgenus *Ochlerotatus* were listed by Gutsevich and Dubitskiy (1981: 99-100). One species, *Ae. refiki* Medschid, was transferred to the monotypic subgenus *Rusticoidus* by Shevchenko and Prudkina (1973). Although this subgenus is well recognized (Knight and Stone 1977), no mention was made of the current status of *Ae. refiki*.

Mezenev (1980) considered *Ae. leucomelas* (Meigen) as a synonym of *Ae. implicatus* Vockeroth. This paper was not mentioned by Gutsevich and Dubitskiy (1981), possibly because their manuscript had been submitted prior to the publication of Meszenov (1980). Gutsevich and Dubitskiy (1981:118) do mention that there are similarities between *Ae. implicatus* and *Ae. leucomelas* and indicate that further study is needed to differentiate the two species. L. T. Nielsen and C. Dahl (personal communication, 1986) consider that they should be retained as separate species; consequently, the synomymy of Mezenev (1980) is not accepted.

The synonymy of *Ae. stramineus* Dubitskiy with *Ae. albineus* Seguy by Danilov (1979) is disputed by Gutsevich and Dubitskiy (1981:121) for the following reasons: The original description of *Ae. albineus* is very brief and it is difficult to make comparisons with USSR material without comparisons with specimens from the type series or type location. It should be mentioned that *Ae. albineus* had been synonymized earlier with *Ae. caspius* (Pallas) (Edwards 1932). Gutsevich and Dubitskiy (1981) think a synonymy with *Ae. campestris* Dyar and Knab is more plausible. Without comparison to the respective three types, these proposed synonyms should be left open.

Aedea simanini Gutsevich is considered to be a synonym of *Ae. niphadopsis* Dyar and Knab by Danilov (1981). The latter species is only known from the plains and foothills of the northwestern USA (Utah, Idaho, Nevada, Oregon and California). Although the descriptions of the two species are rather similar, the male genitalia, female tarsal claws and the arrangement and number of the comb scales on larval segment VIII are quite different. Without careful comparison of material from both the USSR and the USA, this synonymy should be held in abeyance.

On page 111 of the *Aedes* species key (Gutsevich and Dubitskiy 1981), *Ae. communis* (de Geer) and *Ae. pionips* Dyar are not differentiated by their male genitalia (couplet 41). Danilov (1984a) indicates that he has found two good characters in the male genitalia: differences in the length and shape of the setae on the basistyle apical lobe (apicodorsal lobe of gonocoxite) and shape of the claspette filament apex.

Genus *Culex*
Subgenus *Culex*

Culex pipiens Linnaeus is considered to contain two subspecies (*p. pipiens* and *p. molestus* Forskål) in the USSR. Gutsevich et al. (1971:370) are fully cognizant of the biological character of *Cx. p. molestus,* however they justify the maintenance of subspecific status on behavorial and ecological differences in autogenous-eurygamous populations. This does not take into account the modern concept of species developed by Ernst Mayr and associates over the past 40 years (Mayr 1963). It is advisable to consider *Cx. pipiens molestus* as a behaviorial/physiological variant of *Cx. pipiens* without nomenclaturial status (Harbach et al. 1984).

Subgenus

Although *Culex vorax* (Edwards) was placed in synonymy with *Cx. halifaxii* Theobald by Bram (1967), this was not mentioned by Gutsevich et al. (1971) or Gutsevich and Dubitskiy (1981). In the latter paper, reference is only made to the earlier mosquito catalog (Stone et al. 1959) rather than the later edition (Knight and Stone 1977.) The synonymy of Bram (1967) is still considered valid.

Subgenus *Neoculex*

Culex hortensis Ficalbi was transferred from the subgenus *Neoculex* to the subgenus *Maillotia* by Mattingly in 1955. Even though *Cx. hortensis* has been listed under the subgenus *Maillotia* in several mosquito catalogs since 1959, Gutsevich and Dubitskiy (1981) incorrectly retained it in *Neoculex*.

Culex hayashii Yamada was transferred from *Neoculex* by Sirivanakarn (1971) a/ to the subgenus *Eumelanomyia* during his reclassification of *Neoculex*. This subgeneric change was not noted.

Genus *Culiseta*
Subgenus *Culiseta*

Culiseta subochrea (Edwards) was elevated to specific status by Ribeiro et al. (1977) from a subspecies of *Cs. annulata* (Schrank). This change was also not recorded, possibly due to inaccessible literature.

Subgenus *Culicella*

Although *Culiseta setivalva* (Maslov) was assigned to the subgenus *Culicella* (Maslov 1967, Gutsevich et al. 1971), it was listed by Gutsevich and Dubitskiy (1981) in the subgenus *Culiseta*, possibly through an oversight. Danilov (1984b) reduced *Cs. setivalva* to a synonym of *Cs. fumipennis* (Stephens). If this synonymy is verified, then *Cs. setivalva* should be removed from the USSR fauna and *Cs. fumipennis* added.

Genus *Mansonia*

The generic transfer of *Mansonia richiardii* (Ficalbi) and *Ma. buxtoni* (Edwards) to the genus *Coquillettidia* was not noted. However, not all taxonomists are in agreement with the separation of *Mansonia* into two genera.

ADDITIONS TO THE USSR FAUNA

The following species have been described since the publication of Gutsevich and Dubitskiy (1981), or on the basis of recorded distributions, should be added to the fauna.

1. *Aedes (Edwardsaedes) bekkui* Mogi - Recorded from the south Primorye (Danilov 1985).

2. *Aedes (Finlaya) versicolor* (Barraud) - Recorded from the Talysh foothills, Azerbaijan SSR by Danilov (1978) who also elevated *versicolor* from a variety of *Ae. pulcritarsis* (Rondani) and transferred *versicolor* from the subgenus *Ochlerotatus* to the subgenus *Finlaya*. Although *Ae. versicolor* was previously known from only the adult female collected in Kashmir, the determination of *versicolor* was made by comparing specimens from the USSR with the original description, which lacked illustrations.

3. *Aedes (Ochlerotatus) cypriodes* Danilov and Stupin (1982) - Described from Siberia.

4. *Culiseta (Culiseta) nipponica* LaCasse and Yamaguti - Recorded from the Primorye region (Danilov 1983).

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